



حساب مصفوفتي التيار والفولتية لهوائي شريطي دائري محمل بحلقتي معدنيتين ودراسة معاملات الهوائي

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Abstract

A theoretical study of antenna design and calculation of voltage and current matrices using Electric Field Integral Equation (EFIE) and Magnetic Field Integral Equation (MFIE) were presented. These equations have been solved, using the method of moments MoM. It is a numerical method with high calculation capacity also can use Galerkin's approach, which considered weighting functions to convert the integral equations to the linear matrices according to the antenna symmetry about z-axis.

The unknown electric current density on the surface of the conductor, and both unknowns electric and magnetic density current on the surface of the dielectric were calculated. The number of basis functions on different surfaces that provide a saturation case for currents and voltages value were determined on different surfaces and calculated the propose antenna parameters.

Keywords

Basis functions, Radiation pattern, Bandwidth, Gain.